

# California Renewable Electricity Standard

## Proposed Economic Analysis

Public Workshop

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ARB/RD/ESS

# Presentation Outline

- Economic Analysis Requirements
- Baseline and Plausible Scenarios
- Cost Analysis
- Cost-Effectiveness
- Economic Impact Analysis
- Summary

# Required Economic Analysis

- Assess impacts on California business creation, expansion, or elimination as a result of the proposed 33% Renewable Electricity Standard by ARB
- Assess whether the regulation will create or eliminate jobs
- Assess Impacts on affected individuals in California
- Assess Impacts on small businesses
- Assess Impacts on California business competitiveness with other states
- Assess any disproportionate impacts on low-income communities

# Baseline and Plausible Scenarios

- 20% Renewable Portfolio Standard baseline
- 33% RES technically feasible plausible scenarios
- Incremental economic impacts of the likely pathways compared to the baseline scenario

# Cost Analysis

- **RPS 33% Calculator**
  - Developed by the consulting firm Energy and Environmental Economics (E3) for the CPUC Energy Division's RPS 33% Implementation Analysis
  - A spreadsheet that uses cost, resource availability, and performance data to select renewable resources to meet a RPS target
  - Estimates the total cost of implementing a RPS target
- **CAISO Renewable Integration Cost Modeling Project**
- **Multiple Sensitivity Runs of Varying Major Factors**

# Costs to Be Considered

- Existing and new conventional generation fixed and variable costs
- Existing transmission and distribution
- New transmission for renewable power
- New renewable generation and integration
- Potential cost savings from auction of CO<sub>2</sub> allowances by State or Federal governments

# Cost-Effectiveness

- AB 32 definition, “the cost per unit of reduced emissions of greenhouse gases adjusted for its global warming potential.”
- Metric to evaluate cost-effectiveness will be in terms of dollars per ton of GHG reduction
- The incremental costs of achieving a 33% RES above the baseline of 20% RPS

# Economic Impact Analysis

- Business Creation, Expansion, or Elimination
- Impacts dependent on the incremental costs on the overall economy or specific sectors
- Environmental Dynamic Revenue Analysis Model (EDRAM) of the California economy



## Economic Model: EDRAM

- Computable general equilibrium model of California
- Developed by Professor Peter Berck at UC, Berkeley, and CA Department of Finance
- 120 California industrial sectors
- Estimates impacts on total economic activity, personal income, employment, gross state product, and other economic indicators

# Impact on Ratepayers

- Monthly Electric Bill Impacts on Ratepayers
- Residential Households
  - Low Usage
  - Medium Usage
  - High Usage
- Low Income Residential Customers
- Small Businesses

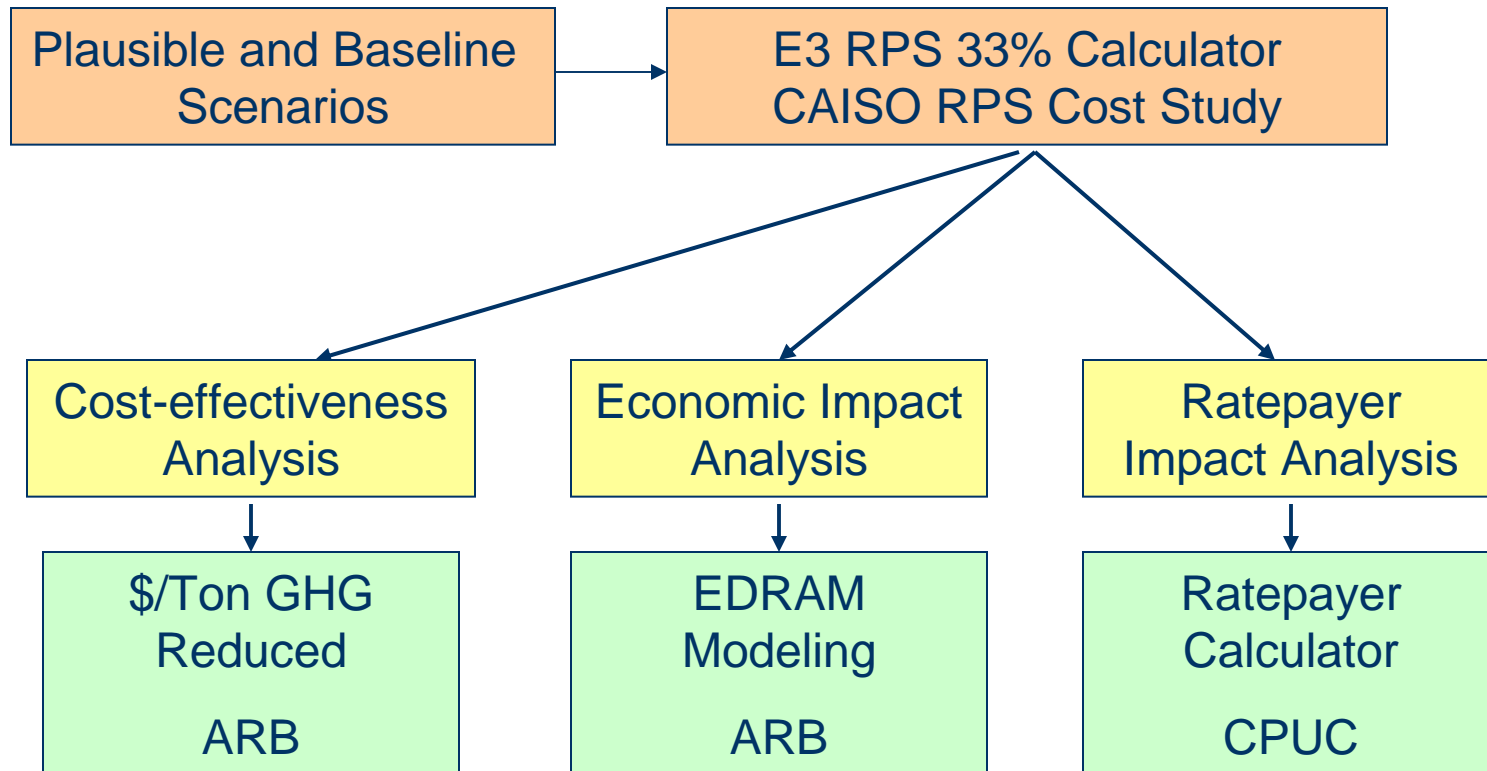
# Employment Impacts

- Incremental cost estimates and the plausible scenarios will largely determine the job impacts
- Impacts on “green jobs” be quantified to the extent possible
- Qualitative assessment of “green jobs” will be included

# Business Impacts

- Small Business Impacts
  - Assess potential impacts on small businesses' financial profile.
- California Business Competitiveness
  - Determine if costs impact California business competitiveness with other states.

# Summary



# Contacts

Fereidun Feizollahi, Manager  
Economic Studies Section  
[ffeizoll@arb.ca.gov](mailto:ffeizoll@arb.ca.gov)  
916-323-1509

Janet Schlosser, Staff Economist  
Economic Studies Section  
[jschloss@arb.ca.gov](mailto:jschloss@arb.ca.gov)  
916-327-8040